Biochemical profile in liver cancer patients

Azmat RASHEED, Asif IQTIDAR (Pharmacology Section, Faculty of Pharmacy, University of Punjab, Old Campus, Lahore, Pakistan)

AIM: To study the biochemical profile in hepatocellular carcinoma patients. METH-ODS: Sera from 25 normal persons were compared with those from 50 patients of whom 25 patients were followed up after 9—10 months. RESULTS: Serum K, bicarbonate, creatinine, and uric acid levels were raised, while serum Na, chloride, urea, urea-N, and residual N were lowered, in patients. After 9-10 months of treatment these parameters showed improvements. CONCLUSION: Blood chemistry is useful during diagnosis and treatment of liver cancer.

KEY WORDS hepatocellular carcinoma; combined antineoplastic agents; blood chemical analysis

Doxorubicin, fluorouracil, vincristine, and cyclophosphamide are commonly used for treatment of liver cancer. This retrospective study was to provide a basis for use of blood chemical analysis in diagnosis and treatment of liver cancer.

MATERIALS AND METHODS

Fifty patients with hepatocellular carcinoma (M 46, F 4; age 20—70 a, x = 55 a; blood group O—18, A—10, B—7) were studied in the Institute of Nuclear Medicine and Oncology, Lahore and Radiotherapy and Oncology Department, King Edward Medical College, Mayo Hospital, Lahore. Diagnosis was made on histological examinations (needle or surgical biopsy) or a fetoproteins > 1 mg L⁻¹ in combination with ultrasonography, computer axial tomogra-

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phy, and angiography.

Doxorubicin 60—75 mg/m² body surface area, slow iv every 3 wk. Fluorouracil 1 g po on alternate days for 6 doses, then 1 g/wk. Vincristine 1.5 mg/m² iv weekly. Cyclophosphamide 2—3 mg kg⁻¹ daily.

Out of the 50 patients, 25 were followed up after 9—10 months. Control group was 25 normal persons. Blood 5 mL was collected for serum analysis.

Determinations of Na and K by flame photometry (Corning 480, Gallencamp, England), chloride(1), bicarbonate(2), creatinine(3), uric acid(4), urea(5), and residual N (calculated from urea). Diagnostic kit, creatinine (Ubicon), uric acid and chloride (Bio-Diagnostik), urea and total CO₂ (Randox). All chemical reagents were of AR.

Statistical significance was measured by two-tailed t test(6).

RESULTS

In liver cancer patients, the serum potassium, bicarbonate, creatinine, and uric acid levels were elevated, while the serum sodium, chloride, urea, urea nitrogen, and residual nitrogen were decreased, versus the healthy persons. After 9—10 months of chemotherapy, these biochemical indices showed improvements (Tab 1).

CONCLUSION

These biochemical profiles in sera are valuable indices for diagnosis and treatment of liver cancer patients.

REFERENCES

1 Fried R, Hoeftmayr J, Velosy G.

New highly sensitive method for the determination of chloride in body fluids without protein precipitation.

Tab 1. Biochemical profiles in normal persons vs patients with hepatocellular carcinoma. 

<table>
<thead>
<tr>
<th></th>
<th>Sodium/ mmol L⁻¹</th>
<th>Potassium/ mmol L⁻¹</th>
<th>Chloride/ mmol L⁻¹</th>
<th>Bicarbonate/ mmol L⁻¹</th>
<th>Creatinine/ mg L⁻¹</th>
<th>Uric acid/ mg L⁻¹</th>
<th>Urea/ mg L⁻¹</th>
<th>Urea-N mg L⁻¹</th>
<th>Residual N mg L⁻¹</th>
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<tbody>
<tr>
<td><strong>Control</strong></td>
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<tr>
<td>n = 25</td>
<td>137.5 ± 1.6</td>
<td>4.0 ± 0.4</td>
<td>98.3 ± 2.2</td>
<td>25.4 ± 1.1</td>
<td>8.7 ± 1.6</td>
<td>42 ± 6</td>
<td>282 ± 69</td>
<td>13 ± 3</td>
<td>24 ± 3</td>
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<td><strong>Patients</strong></td>
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<tr>
<td>n = 50</td>
<td>106 ± 16²</td>
<td>4.5 ± 0.7</td>
<td>95 ± 4</td>
<td>28.5 ± 1.1</td>
<td>20 ± 6</td>
<td>82 ± 17²</td>
<td>135 ± 25²</td>
<td>6.3 ± 1.6</td>
<td>16.8 ± 1.8²</td>
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<tr>
<td>n = 25</td>
<td>114 ± 18²</td>
<td>4.2 ± 0.7</td>
<td>96 ± 5</td>
<td>27.4 ± 1.2</td>
<td>14 ± 5</td>
<td>68 ± 11²</td>
<td>130 ± 20²</td>
<td>6.1 ± 0.9²</td>
<td>16.5 ± 1.0²</td>
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</tbody>
</table>


Possati P, Francioli L, Berti G. Use of 3, 5-dichloro-2-hydroxybenzenesulfonic acid/4-aminoazone chromogenic system in direct enzyme as-


Relationship between platelet density and platelet aggregation, ATP release, and cytosolic-free calcium mobilization in rabbits

Bai-Yan, LI Wen-Han

Department of Pharmacology, Harbin Medical University, Harbin 150086, China

Al Ying (Department of Neurology, The First City Hospital of Harbin, Harbin 150010, China)

IM: To study the relationship of platelet density and platelet functions, including aggregation, ATP release, and intracellular calcium mobilization. METHODS: Platelet density was evaluated by discontinuous gradients of Percoll; high density (HD, >1.062, 20% - 30%), intermediate density (ID, around 1.057, 40% - 50%) and, low density (LD, <1.051, 10% - 15%). The sizes of platelets in these subpopulations were widely different (HD: 725 ± 76, ID: 443 ± 47; and LD: 307 ± 46) and well correlated with the density (r = 0.988, P < 0.01). Thrombin 0.5 U-induced aggregations in the 3 subpopulations were 78 ± 8%, 69 ± 4%, and 62 ± 3%, respectively and a